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TITLE: COMPUTER ANALYSIS OF OPTIC NERVE HEAD PHOTOGRAPHS: THE DIFFERENCE BETWEEN REAL AND FILTERED IMAGES.
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PURPOSE: the aim of the study was the evaluation of the influence of the analegic-digital conversion on the message of optic nerve head photographs, with specific interest to the digital filters used for the cleaning of noise.
METHODS: we used an image processing sistem constituted by a PC with the card PIP 1024 B (Matrox) and two softwares with specific algorythms that realize grey level analysis and automatized segmentation of the fundus photographs.
We analyzed by means of this sistem the optic nerve head photographs of two groups of patients: group A was formed by 54 patients (29 female, 25 male) with ocular hypertensive eyes; group B was formed by 62 subjects (32 female, 30 male) with normal IOP. Computerized visual field and electrofunctional tests were negative in all eyes. We evaluated the mean pixel value of the neuroretinal rim area from the non filtered and filtered images.
RESULTS: In the non filtered images we found:142.7 (S.D.28.2) in the group A, and 127.3 (S.D.26.4) in the group B. The T test was: t=3.03, $p<0.05$. In the filtered images we found 145.3 (S.D.2.76) in the group A and 129.1 (S.D.2.07) in the group B. T test: t=29.2, $p<0.001$.
CONCLUSIONS: our results suggests that the massage of the digital images can be destryed by the use of the filters and also its reproductibility can be affected as much as the influence of the technical parameters of image acquisition, such us brightness, out-of focus, underexposition, or the age and sex-related variation of the fundus photographs.

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TITLE: INTRAOCULAR PRESSURE IN DIABETIC AND NON-DIABETIC PATIENTS. AN EPIDEMIOLOGICAL STUDY.
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Purpose: The association diabetes-glaucoma has been controversial for several years. In previous papers we found no differences in prevalence of glaucome in diabetic and non-diabetic population. In this work we compare the intraocular pressure in a diabetic population versus a non-diabetic population.
Methods: We performed a cross-sectional study to determine the intraocular pressure in 3 samples of the population of Extremadura. 1200 diabetic patients, 417 controls (spouses of diabetic patients) and 1557 controls. Ophthalmic exploration included: tonometry, visual acuity, biomicroscopy, ophthalmoscopy and fundus photography. Statistical analysis: Student-t test and Kruskal-Wallis.
Results: The mean intraocular pressure was: 1)Diabetic patiens: 14.32±3.2 mmHg; 2) Control (417 patients): 15.36 ± 3 mmHg; 3) Control (1557 patients): 15.38±3.6 mmHg. Intraocular pressure varies significantly with age of the patients in 3 samples. We have compared the intraocular pressure of diabetic patients with controls (attending age and sex). We found that diabetic patients have lower intraocular pressure than controls ($p<0.05$).
Conclusions: Some authors showed that diabetic patients have intraocular pressure higher than normal population. In our work, we found that both control groups have higher intraocular pressure than diabetic patiets, but although this difference is statistically significative we think that hasn't clinical consequences.We cann't conclude that diabetic patiens have higher intraocular pressure than non-diabetics.

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There have been reports that IOP readings after excimer laser PRK are reduced. This is postulated to be a result of changes in the shape of the cornea affecting the ability of both NCT and goldman tonometry to function by altering the corneal surface indented giving falsely low results.

We present the results of 2,000 patients treated at Optimax Laser Eye Clinics and quantify these changes by the degree of myopia treated and by the age of the patient. IOP was recorded by NCT at the time of the initial consultation when a baseline IOP reading was obtained and this was compared to readings obtained at the time of the second eye treatment taking place about 6 months later.

These results will enable a more accurate assessment of the IOP to be made allowing for the low readings obtained. This is of particular importance in those patients who are given steroid drops to prevent regression and any other patients with suspicions of glaucoma or tendancy to raised IOP. This will also be of great importance in the management of any future glaucoma.

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THE EFFECT OF PERIBULBAR ANAESTHESIA ON INTRAOCULAR PRESSURE
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Purpose: To investigate the effect of higher drug volumes on intraocular pressure (IOP) variation following peribulbar anesthesia (PBA).
Methods: 68 informed patients, candidate to cataract surgery, were prospectively assigned to receive either 12 ml (Group I, n=32), 16 ml (Group II, n=26) or 12 ml (Group III, n=8, primary open angle glaucoma) of bupivacaine 0.5%, xylocaine 2% (50/50) with hyaluronidase (12.5 u/ml). IOP was measured using a Mentor Tonopen XL, before and immediatly after injection, then 15 mn folllowing orbital compression set at 30 mm Hg.
Results: IOP increase following injection was significantly higher in the 16 ml group (+105±71%) than in the 12 ml group (+45±61%, $p<0.001$). A subset of 2 patients from the 12 ml group (6.25%) and 6 patients from the 16 ml group (23%), had uncompleted injections (UI) due to limiting orbital septum tension. These patients had a significantly higher pressure rise after injection (+108±42% for UI"12 ml", +247±49% for UI"16ml", $p<0.001$ and $p<0.001$). Glaucoma patients had a higher IOP before and after injection, but variation in IOP was not significantly different from group I. IOP returned to baseline values after compression in group I and II, and was lowered in group III ($p<0.01$). Quality of analgesia/akinesia (semi-quantitative scales), was not affected by injection volume.
Conclusion: Standard injection volumes, clinical monitoring of septal tension and compression may prevent detrimental pressure rise during PBA.